OIPE
JUL 14 2004
PATENT & TRADEMARK OFFICE

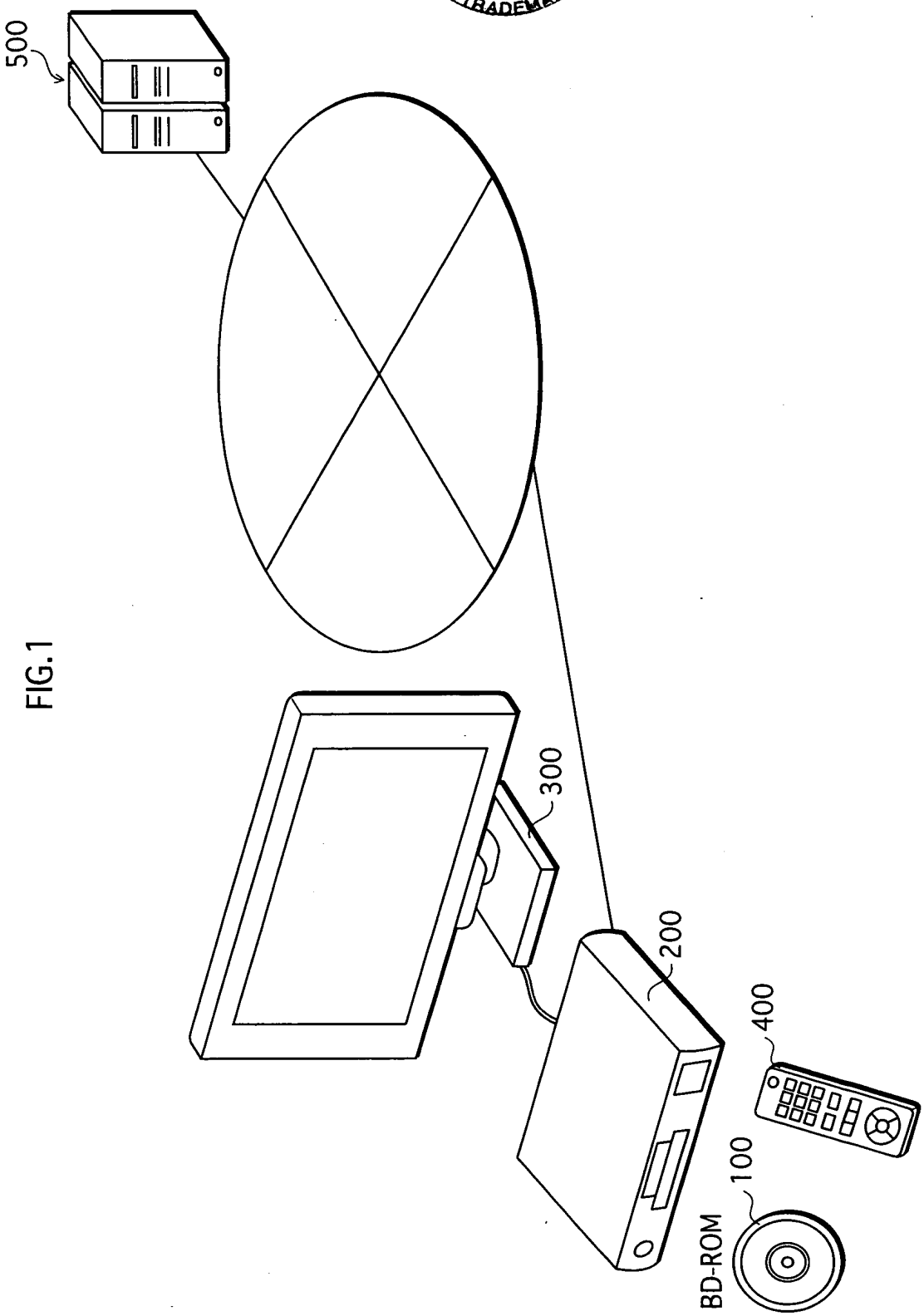


FIG.1

FIG.2

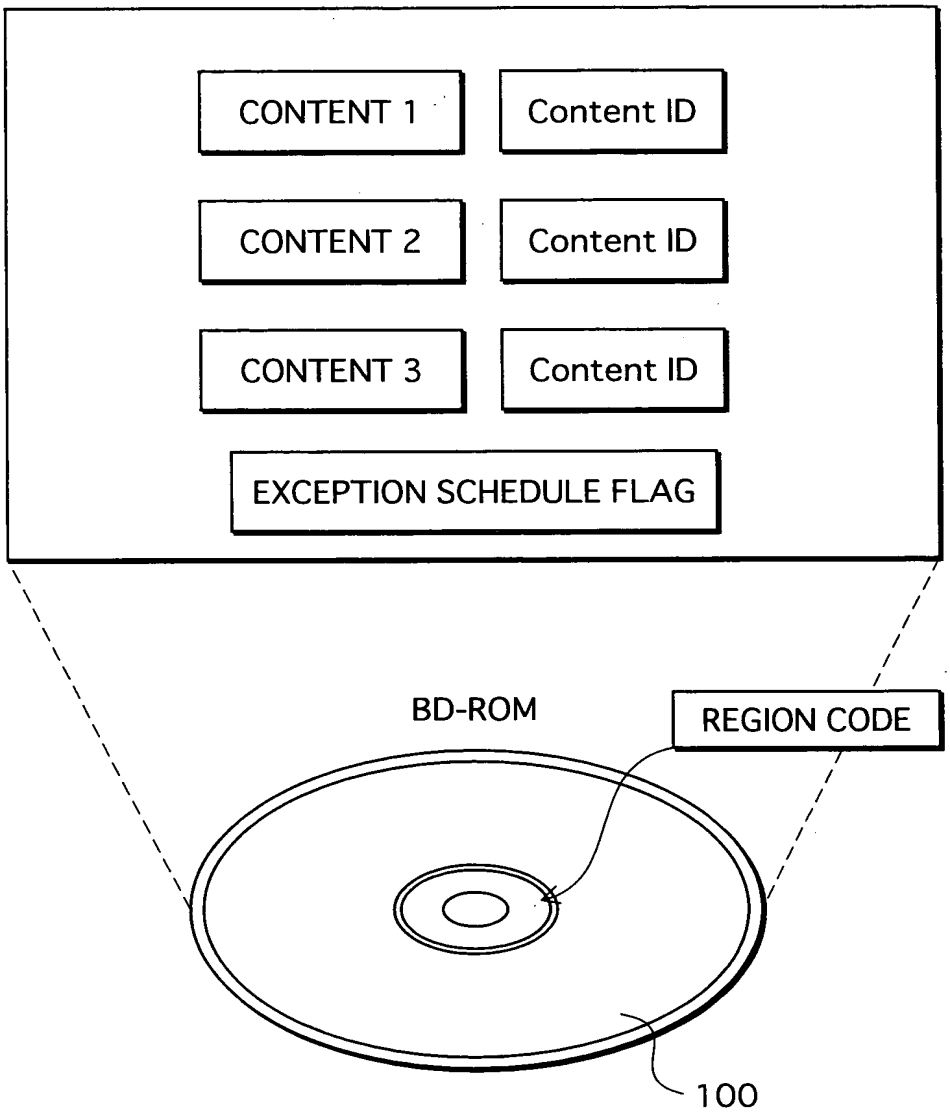

CONTENT 1
Content ID
CONTENT 2
Content ID
CONTENT 3
Content ID
EXCEPTION SCHEDULE FLAG
BD-ROM
REGION CODE
100

FIG.3

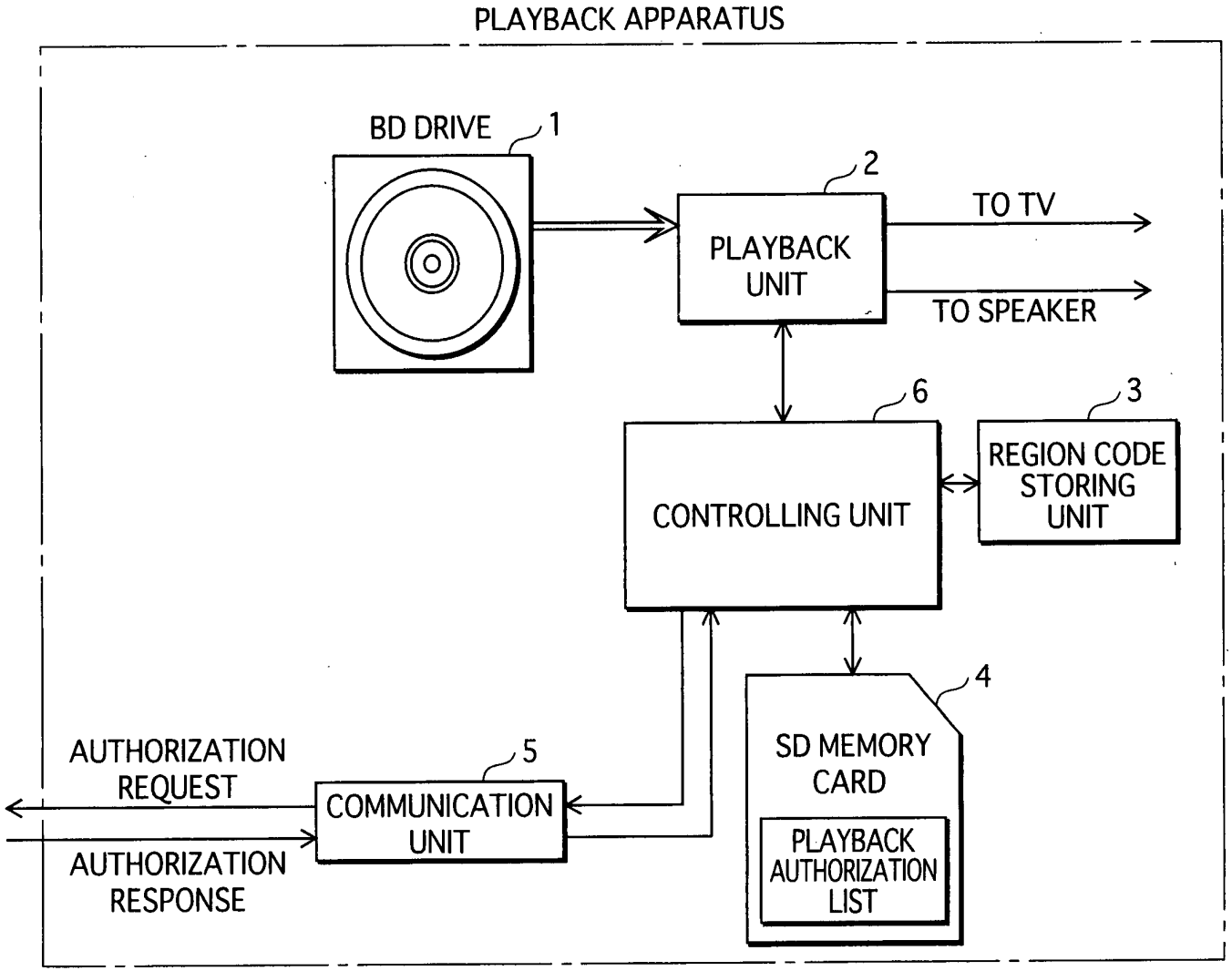

PLAYBACK APPARATUS
BD DRIVE
1
2
PLAYBACK UNIT
TO TV
TO SPEAKER
6
CONTROLLING UNIT
3
REGION CODE STORING UNIT
4
SD MEMORY CARD
PLAYBACK AUTHORIZATION LIST
5
COMMUNICATION UNIT
AUTHORIZATION REQUEST
AUTHORIZATION RESPONSE

FIG.4

PLAYBACK AUTHORIZATION LIST

	Content ID	Region Code	EXCLUSION INFORMATION	DISTRIBUTION COMPANY INFORMATION	RELEASE DATE INFORMATION
REPRODUCTION AUTHORIZATION INFORMATION 1	4GH	1	EXCLUSIVE	COMPANY AAA	10/02/2002
REPRODUCTION AUTHORIZATION INFORMATION 2	4GH	2	NON-EXCLUSIVE	COMPANY BBB	01/23/2002
REPRODUCTION AUTHORIZATION INFORMATION 3	QW1	2	EXCLUSIVE	COMPANY CCC	01/24/1998

FIG.5

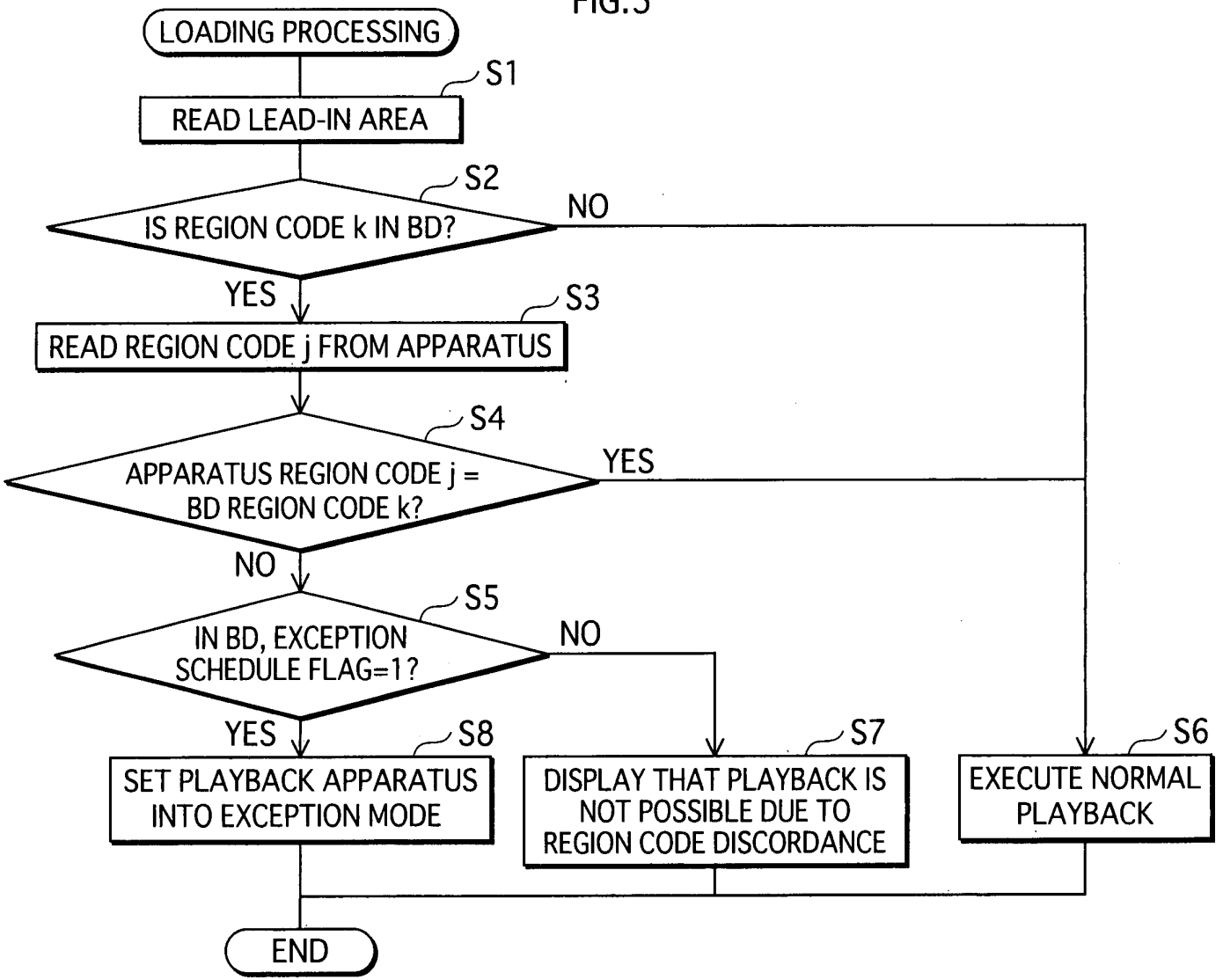

LOADING PROCESSING
S1
READ LEAD-IN AREA
S2
IS REGION CODE k IN BD?
NO
YES
S3
READ REGION CODE j FROM APPARATUS
S4
APPARATUS REGION CODE j = BD REGION CODE k?
YES
NO
S5
IN BD, EXCEPTION SCHEDULE FLAG=1?
NO
YES
S8
SET PLAYBACK APPARATUS INTO EXCEPTION MODE
S7
DISPLAY THAT PLAYBACK IS NOT POSSIBLE DUE TO REGION CODE DISCORDANCE
S6
EXECUTE NORMAL PLAYBACK
END

FIG.6

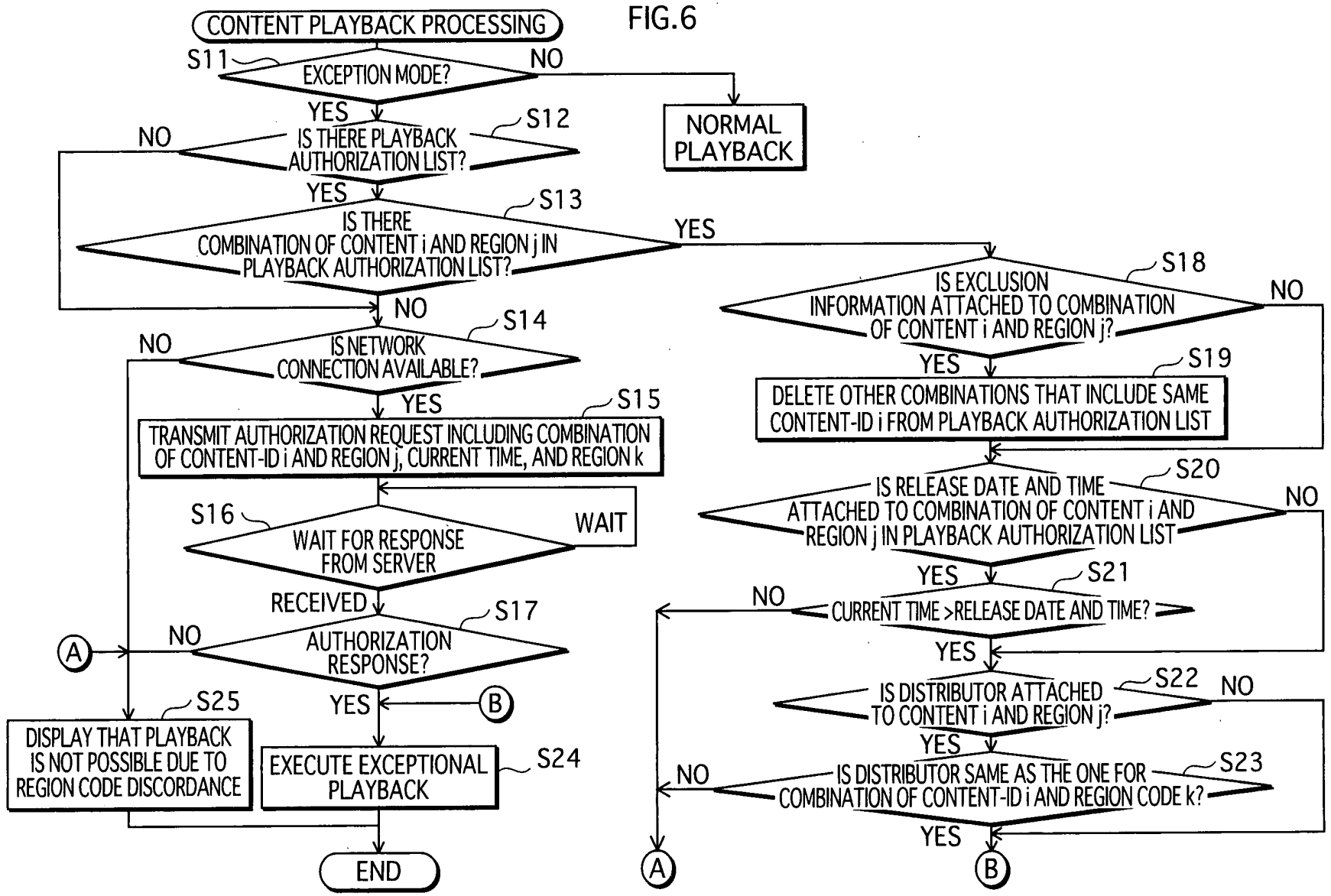

CONTENT PLAYBACK PROCESSING
S11
EXCEPTION MODE?
NO
NORMAL PLAYBACK
YES
S12
IS THERE PLAYBACK AUTHORIZATION LIST?
NO
YES
S13
IS THERE COMBINATION OF CONTENT i AND REGION j IN PLAYBACK AUTHORIZATION LIST?
YES
NO
S14
IS NETWORK CONNECTION AVAILABLE?
NO
YES
S15
TRANSMIT AUTHORIZATION REQUEST INCLUDING COMBINATION OF CONTENT-ID i AND REGION j, CURRENT TIME, AND REGION k
S16
WAIT FOR RESPONSE FROM SERVER
WAIT
RECEIVED
S17
AUTHORIZATION RESPONSE?
NO
A
YES
B
S25
DISPLAY THAT PLAYBACK IS NOT POSSIBLE DUE TO REGION CODE DISCORDANCE
S24
EXECUTE EXCEPTIONAL PLAYBACK
END
S18
IS EXCLUSION INFORMATION ATTACHED TO COMBINATION OF CONTENT i AND REGION j?
NO
YES
S19
DELETE OTHER COMBINATIONS THAT INCLUDE SAME CONTENT-ID i FROM PLAYBACK AUTHORIZATION LIST
S20
IS RELEASE DATE AND TIME ATTACHED TO COMBINATION OF CONTENT i AND REGION j IN PLAYBACK AUTHORIZATION LIST
NO
YES
S21
CURRENT TIME >RELEASE DATE AND TIME?
NO
YES
S22
IS DISTRIBUTOR ATTACHED TO CONTENT i AND REGION j?
NO
YES
S23
IS DISTRIBUTOR SAME AS THE ONE FOR COMBINATION OF CONTENT-ID i AND REGION CODE k?
NO
YES
A
B

FIG.7

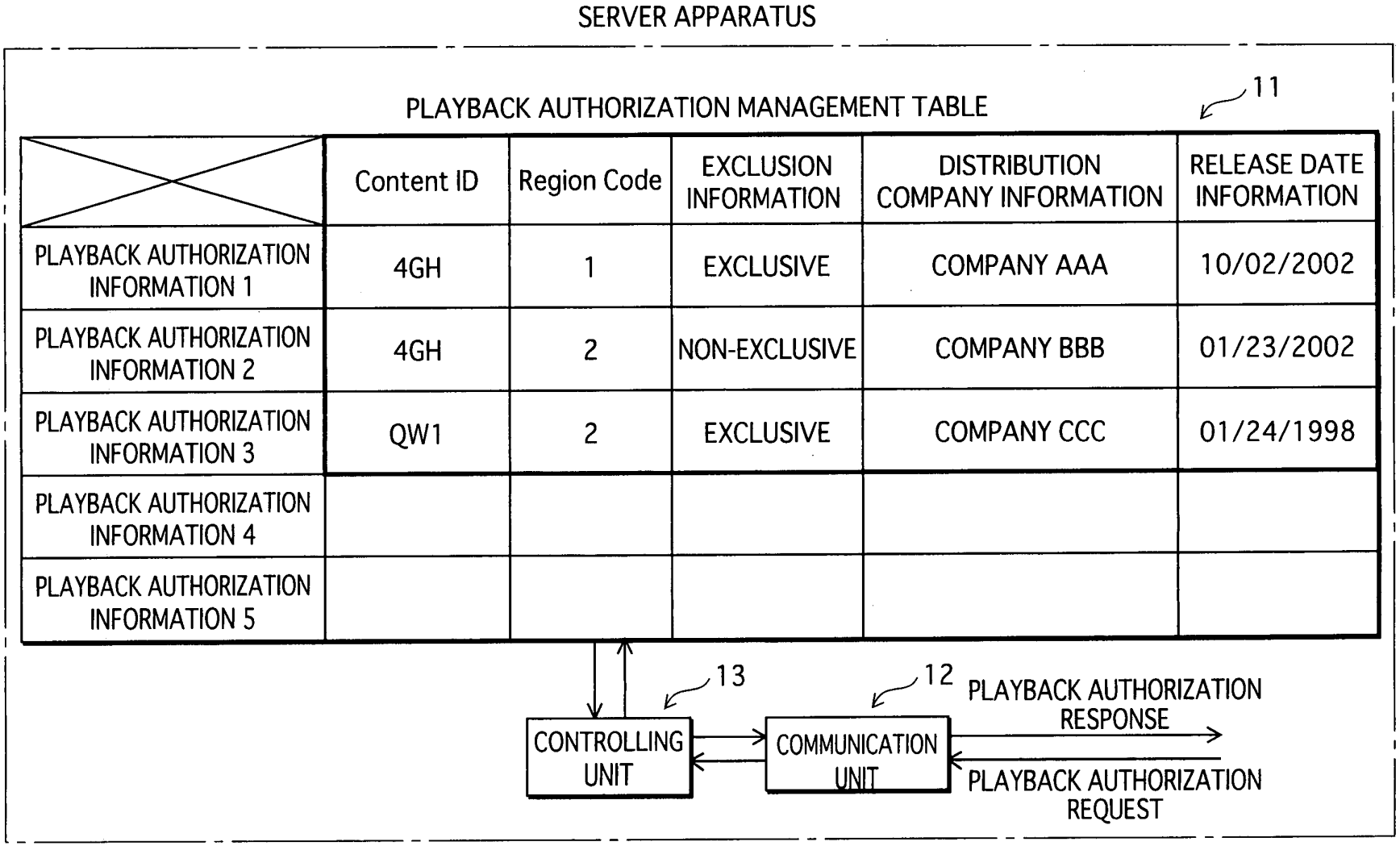

SERVER APPARATUS
PLAYBACK AUTHORIZATION MANAGEMENT TABLE
11
Content ID
Region Code
EXCLUSION INFORMATION
DISTRIBUTION COMPANY INFORMATION
RELEASE DATE INFORMATION
PLAYBACK AUTHORIZATION INFORMATION 1
4GH
1
EXCLUSIVE
COMPANY AAA
10/02/2002
PLAYBACK AUTHORIZATION INFORMATION 2
4GH
2
NON-EXCLUSIVE
COMPANY BBB
01/23/2002
PLAYBACK AUTHORIZATION INFORMATION 3
QW1
2
EXCLUSIVE
COMPANY CCC
01/24/1998
PLAYBACK AUTHORIZATION INFORMATION 4
PLAYBACK AUTHORIZATION INFORMATION 5
13
12
CONTROLLING UNIT
COMMUNICATION UNIT
PLAYBACK AUTHORIZATION RESPONSE
PLAYBACK AUTHORIZATION REQUEST

FIG.8

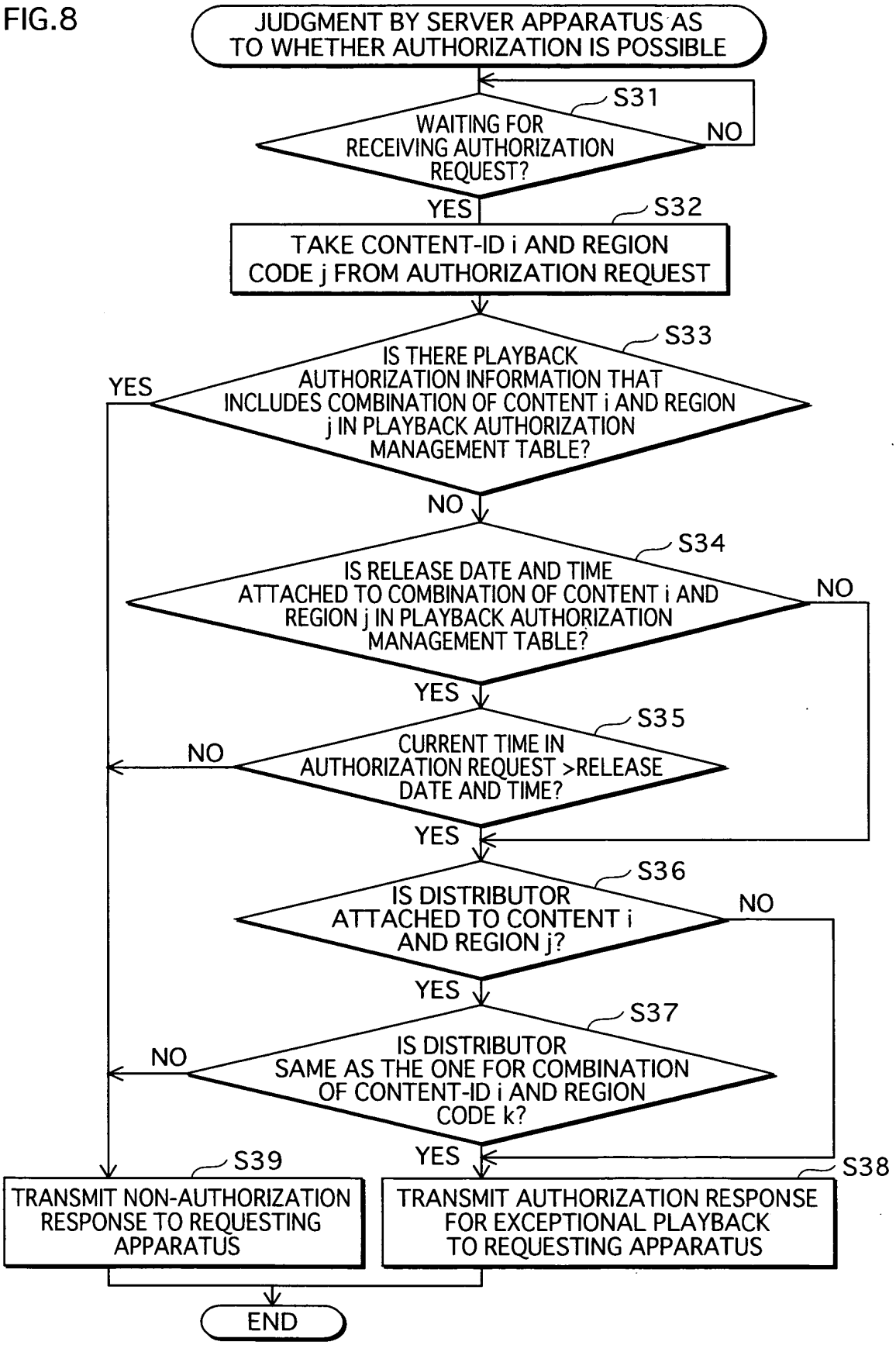

JUDGMENT BY SERVER APPARATUS AS TO WHETHER AUTHORIZATION IS POSSIBLE
S31
WAITING FOR RECEIVING AUTHORIZATION REQUEST?
NO
YES
S32
TAKE CONTENT-ID i AND REGION CODE j FROM AUTHORIZATION REQUEST
S33
IS THERE PLAYBACK AUTHORIZATION INFORMATION THAT INCLUDES COMBINATION OF CONTENT i AND REGION j IN PLAYBACK AUTHORIZATION MANAGEMENT TABLE?
YES
NO
S34
IS RELEASE DATE AND TIME ATTACHED TO COMBINATION OF CONTENT i AND REGION j IN PLAYBACK AUTHORIZATION MANAGEMENT TABLE?
NO
YES
S35
CURRENT TIME IN AUTHORIZATION REQUEST >RELEASE DATE AND TIME?
NO
YES
S36
IS DISTRIBUTOR ATTACHED TO CONTENT i AND REGION j?
NO
YES
S37
IS DISTRIBUTOR SAME AS THE ONE FOR COMBINATION OF CONTENT-ID i AND REGION CODE k?
NO
YES
S39
TRANSMIT NON-AUTHORIZATION RESPONSE TO REQUESTING APPARATUS
S38
TRANSMIT AUTHORIZATION RESPONSE FOR EXCEPTIONAL PLAYBACK TO REQUESTING APPARATUS
END

FIG.9

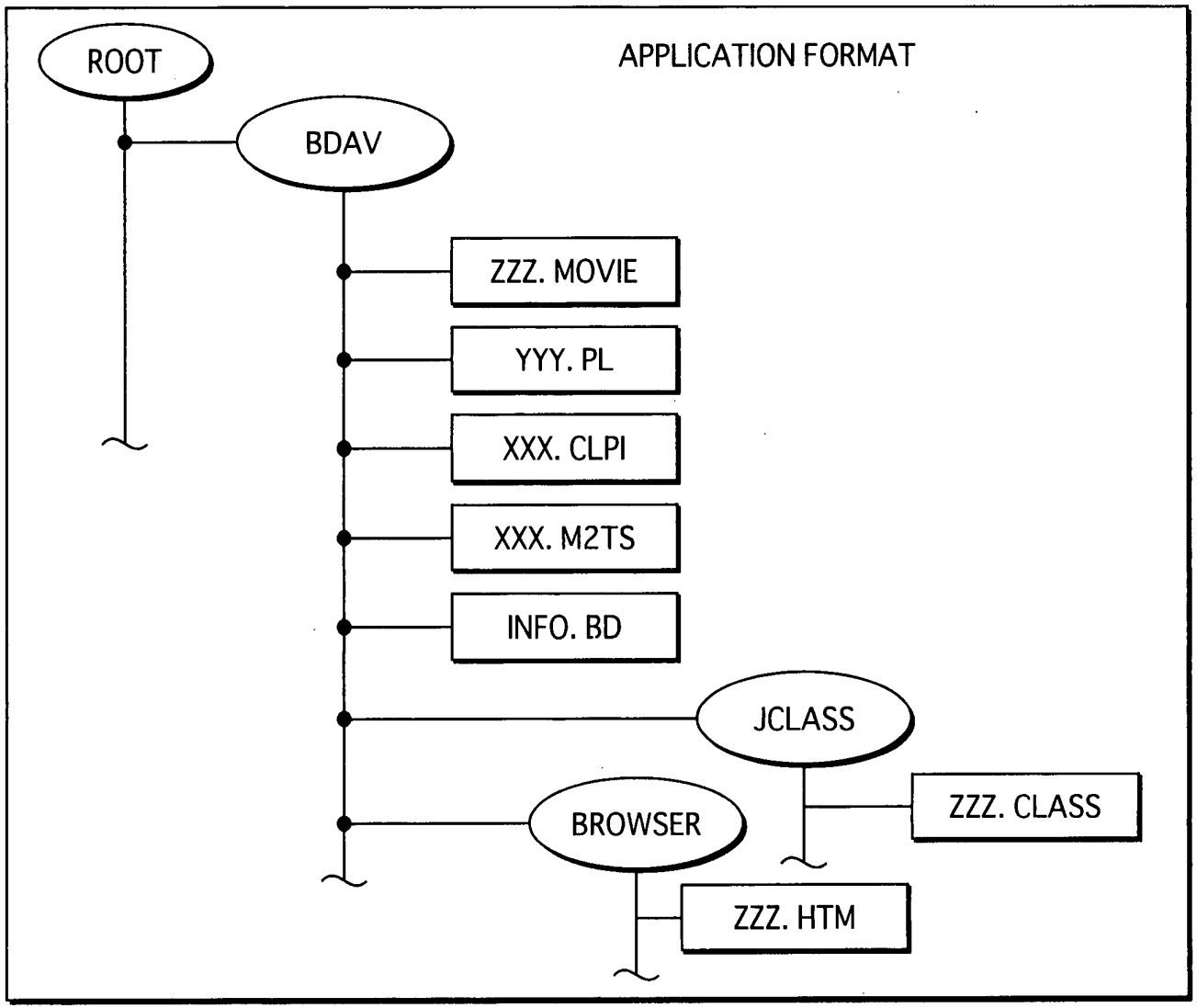

ROOT
APPLICATION FORMAT
BDAV
ZZZ. MOVIE
YYY. PL
XXX. CLPI
XXX. M2TS
INFO. BD
JCLASS
ZZZ. CLASS
BROWSER
ZZZ. HTM

FIG. 10

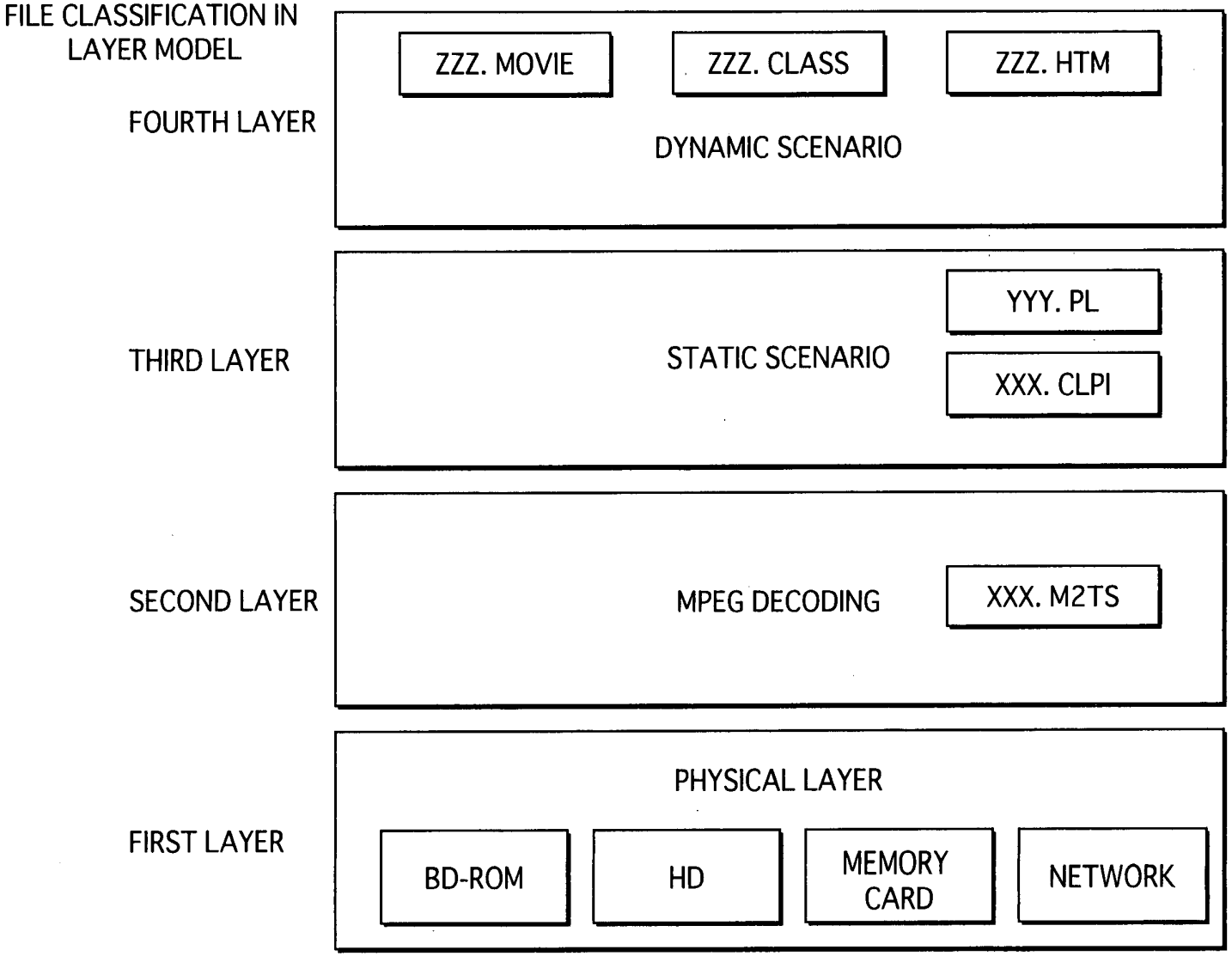

FILE CLASSIFICATION IN LAYER MODEL
FOURTH LAYER
ZZZ. MOVIE
ZZZ. CLASS
ZZZ. HTM
DYNAMIC SCENARIO
THIRD LAYER
STATIC SCENARIO
YYY. PL
XXX. CLPI
SECOND LAYER
MPEG DECODING
XXX. M2TS
FIRST LAYER
PHYSICAL LAYER
BD-ROM
HD
MEMORY CARD
NETWORK

FIG. 11

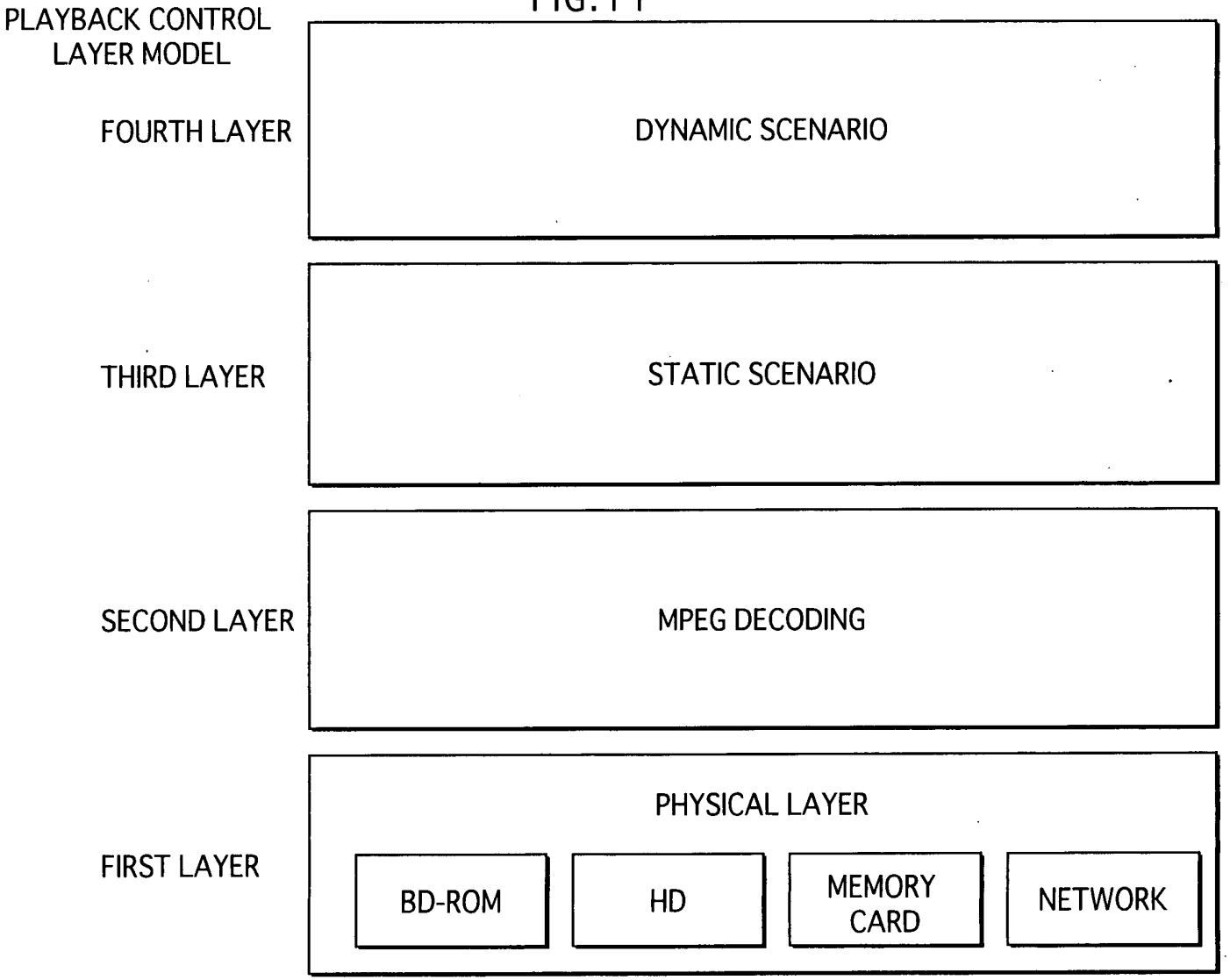

PLAYBACK CONTROL LAYER MODEL
FOURTH LAYER
DYNAMIC SCENARIO
THIRD LAYER
STATIC SCENARIO
SECOND LAYER
MPEG DECODING
FIRST LAYER
PHYSICAL LAYER
BD-ROM
HD
MEMORY CARD
NETWORK

FIG. 12

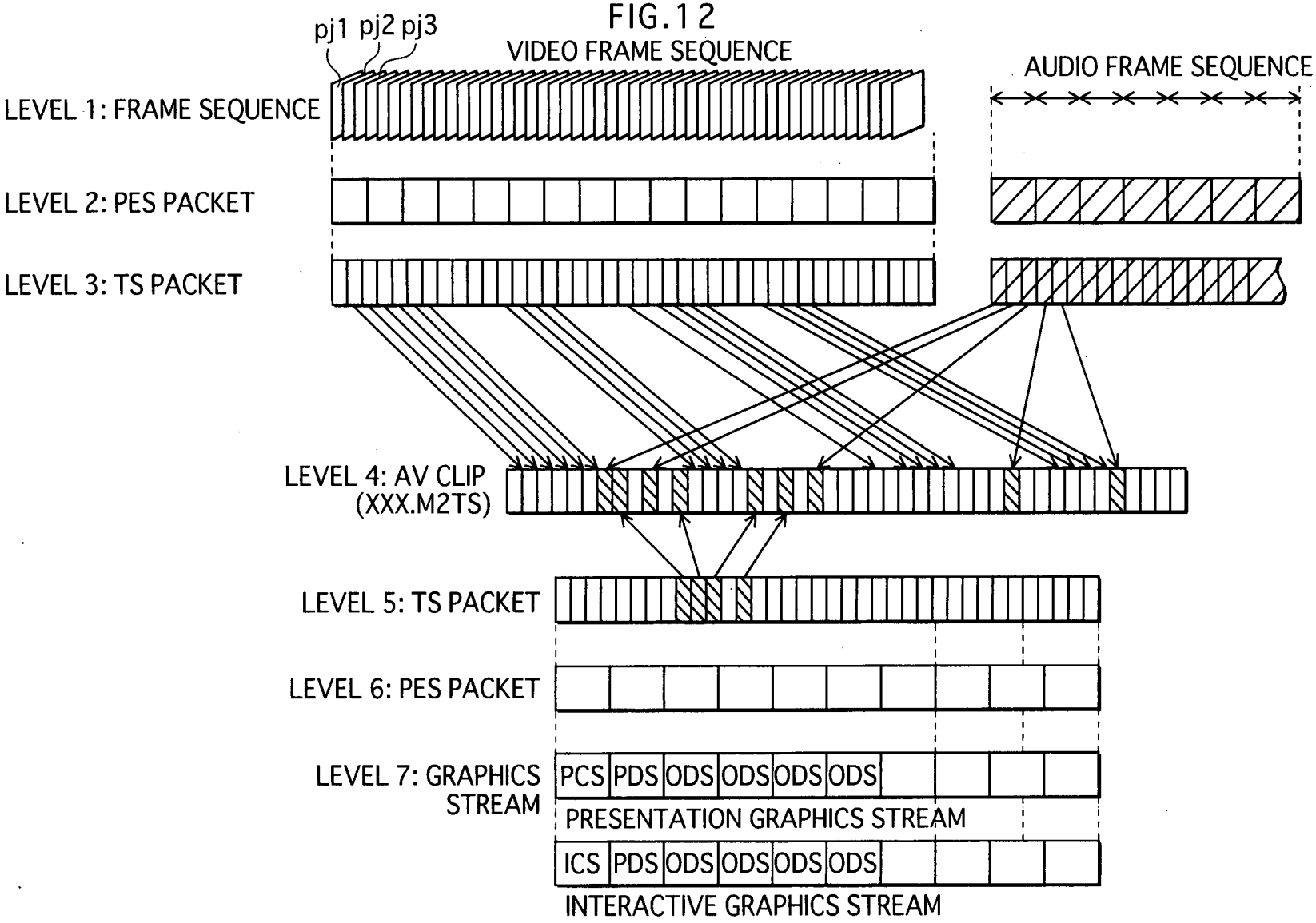

pj1 pj2 pj3
VIDEO FRAME SEQUENCE
AUDIO FRAME SEQUENCE
LEVEL 1: FRAME SEQUENCE
LEVEL 2: PES PACKET
LEVEL 3: TS PACKET
LEVEL 4: AV CLIP
(XXX.M2TS)
LEVEL 5: TS PACKET
LEVEL 6: PES PACKET
LEVEL 7: GRAPHICS
STREAM
PCS
PDS
ODS
ODS
ODS
ODS
PRESENTATION GRAPHICS STREAM
ICS
PDS
ODS
ODS
ODS
ODS
INTERACTIVE GRAPHICS STREAM

FIG.13

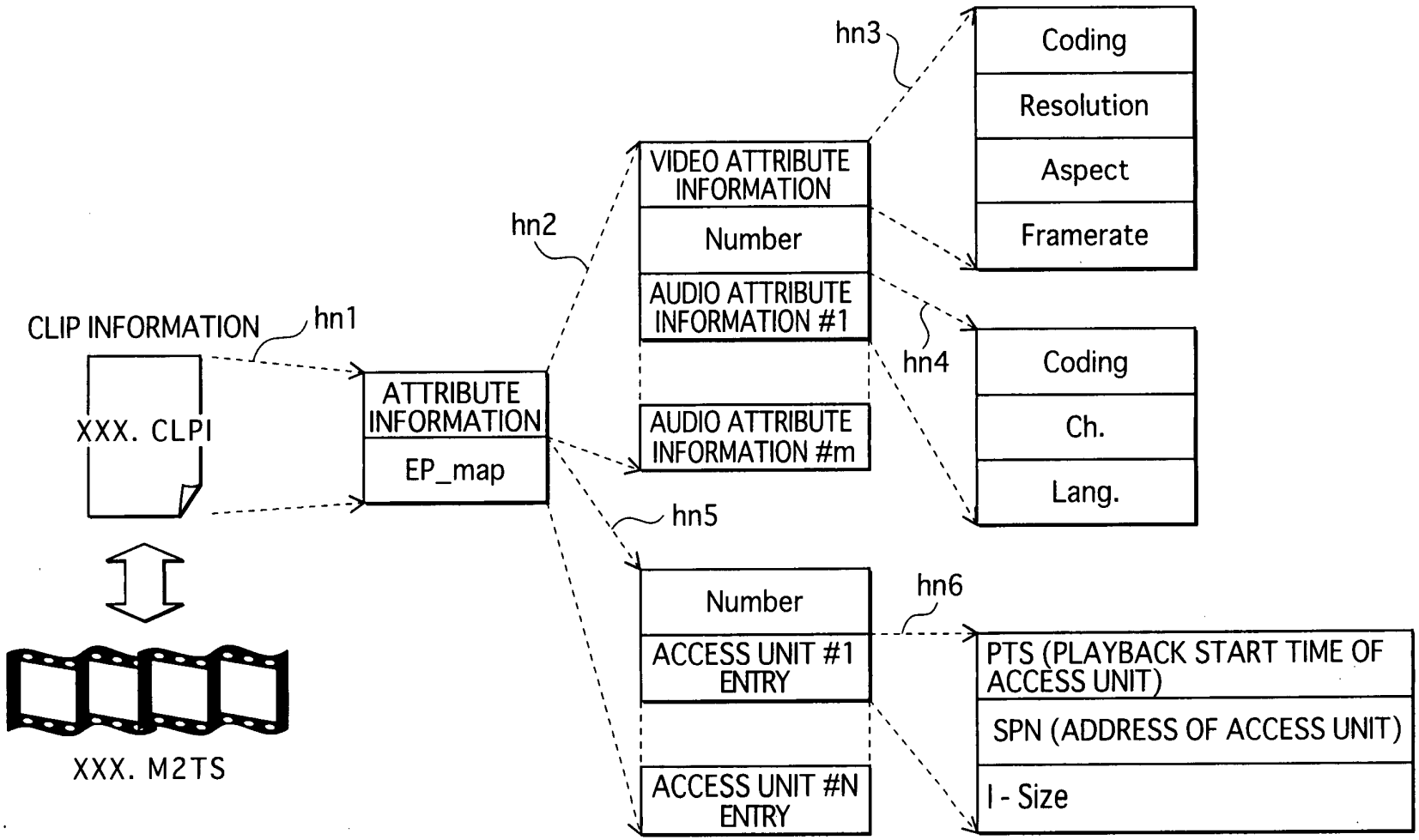

CLIP INFORMATION
hn1
XXX. CLPI
XXX. M2TS
ATTRIBUTE INFORMATION
EP_map
hn2
VIDEO ATTRIBUTE INFORMATION
Number
AUDIO ATTRIBUTE INFORMATION #1
AUDIO ATTRIBUTE INFORMATION #m
hn3
Coding
Resolution
Aspect
Framerate
hn4
Coding
Ch.
Lang.
hn5
Number
ACCESS UNIT #1 ENTRY
ACCESS UNIT #N ENTRY
hn6
PTS (PLAYBACK START TIME OF ACCESS UNIT)
SPN (ADDRESS OF ACCESS UNIT)
I - Size

FIG.14

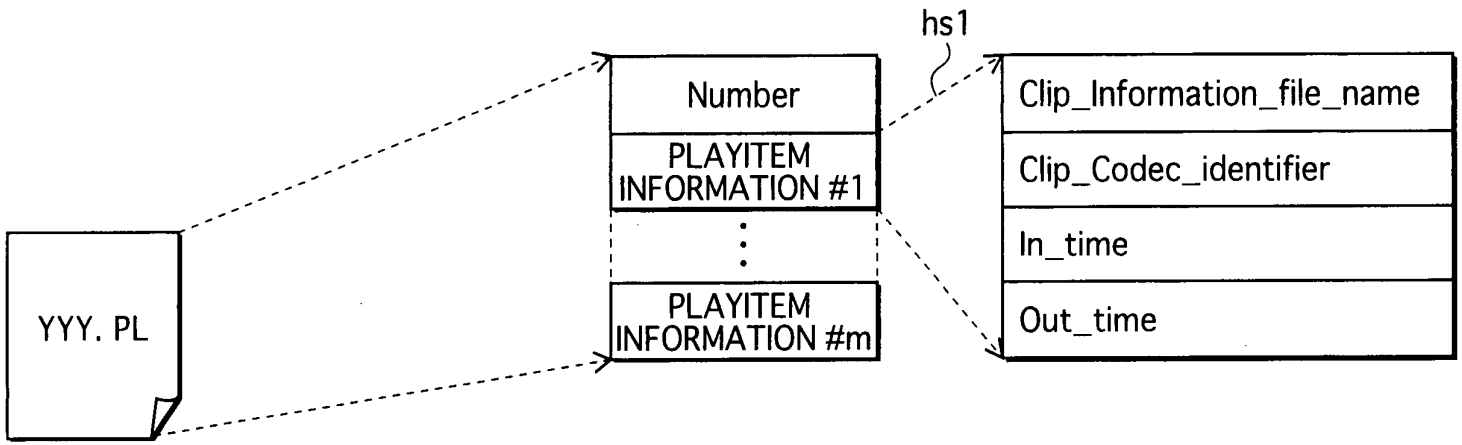

hs1
Number
PLAYITEM INFORMATION #1
PLAYITEM INFORMATION #m
YYY. PL
Clip_Information_file_name
Clip_Codec_identifier
In_time
Out_time

FIG.15

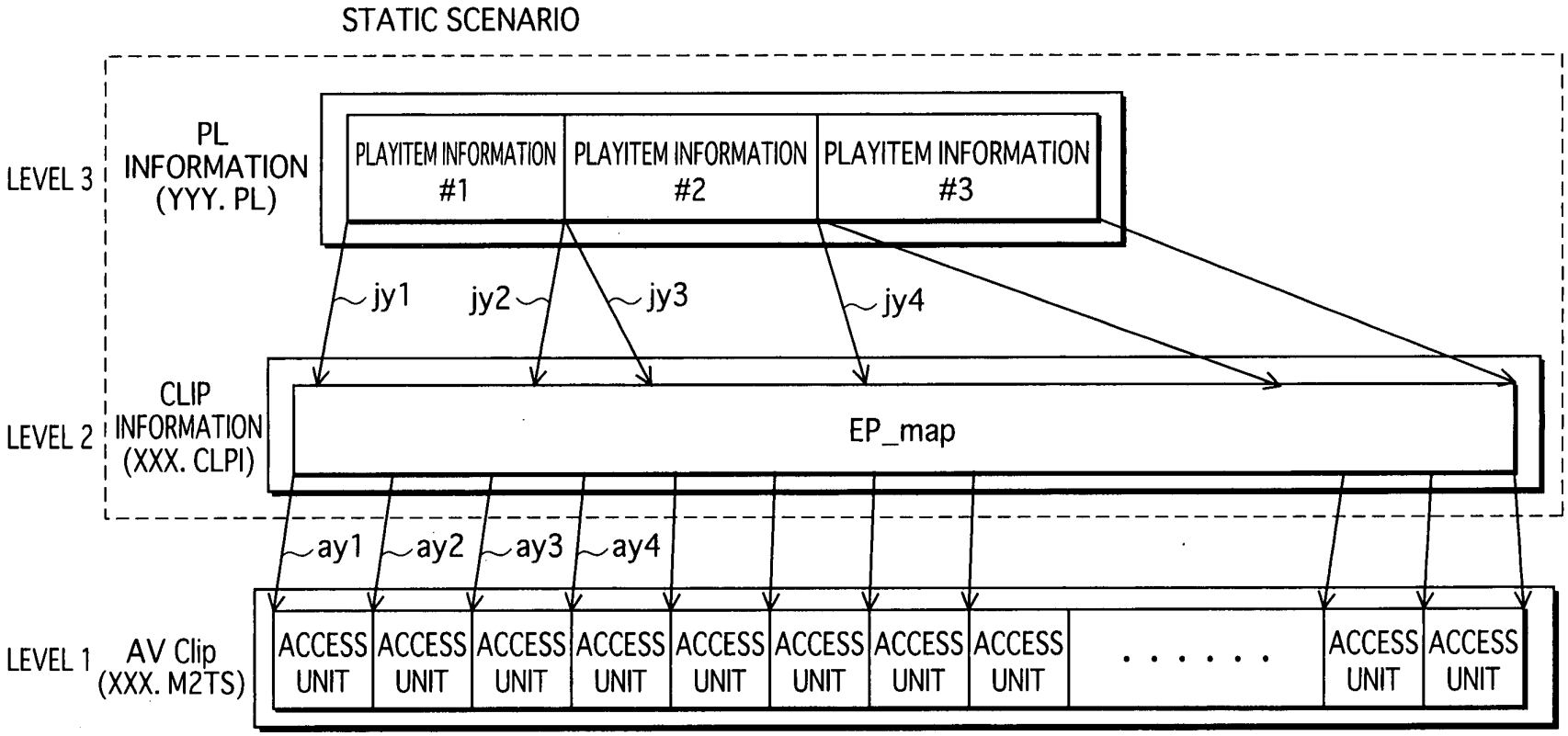

STATIC SCENARIO
LEVEL 3
PL INFORMATION (YYY. PL)
PLAYITEM INFORMATION #1
PLAYITEM INFORMATION #2
PLAYITEM INFORMATION #3
jy1
jy2
jy3
jy4
LEVEL 2
CLIP INFORMATION (XXX. CLPI)
EP_map
ay1
ay2
ay3
ay4
LEVEL 1
AV Clip (XXX. M2TS)
ACCESS UNIT
. . . . . .

FIG.16

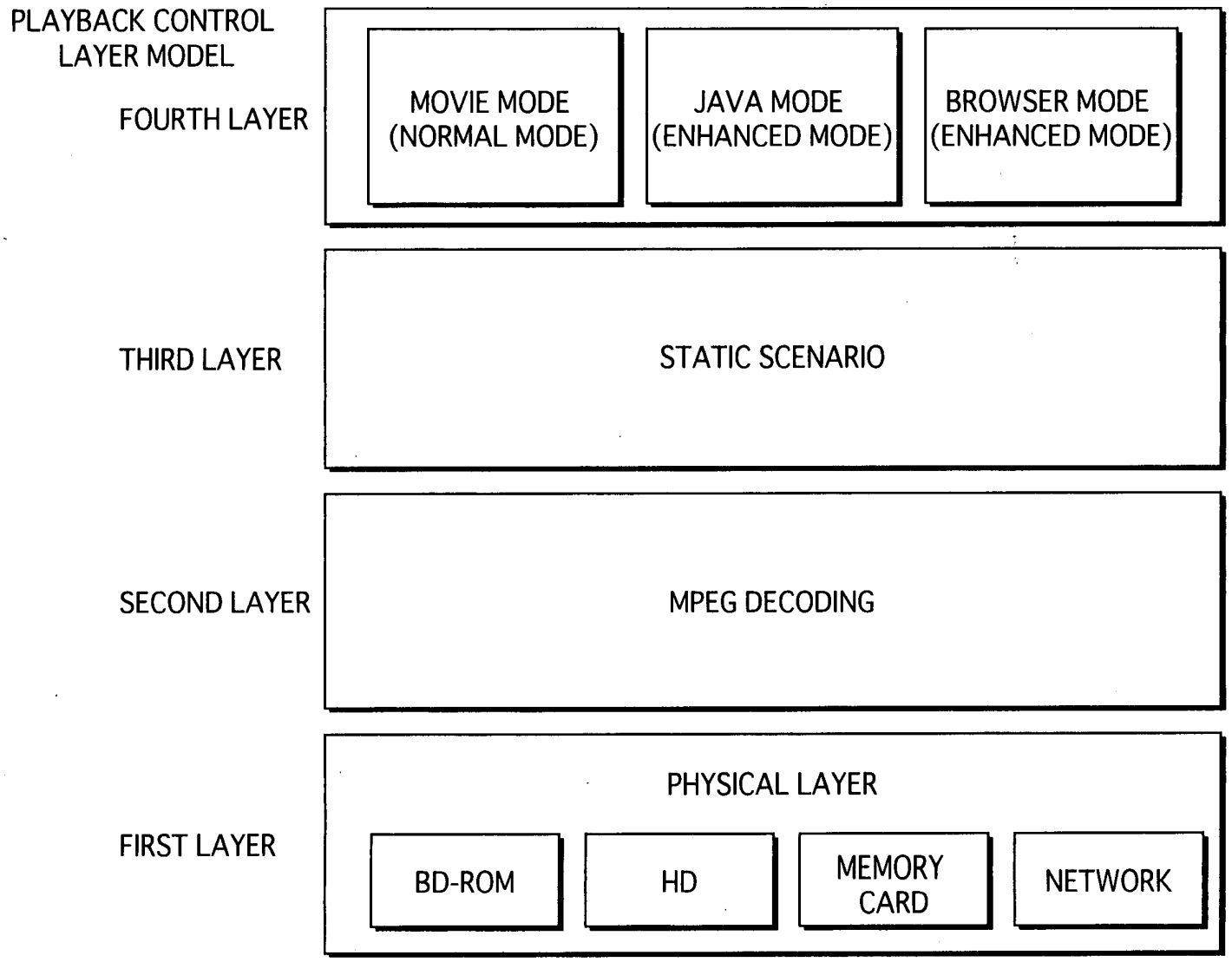

PLAYBACK CONTROL LAYER MODEL
FOURTH LAYER
MOVIE MODE (NORMAL MODE)
JAVA MODE (ENHANCED MODE)
BROWSER MODE (ENHANCED MODE)
THIRD LAYER
STATIC SCENARIO
SECOND LAYER
MPEG DECODING
FIRST LAYER
PHYSICAL LAYER
BD-ROM
HD
MEMORY CARD
NETWORK

FIG. 17

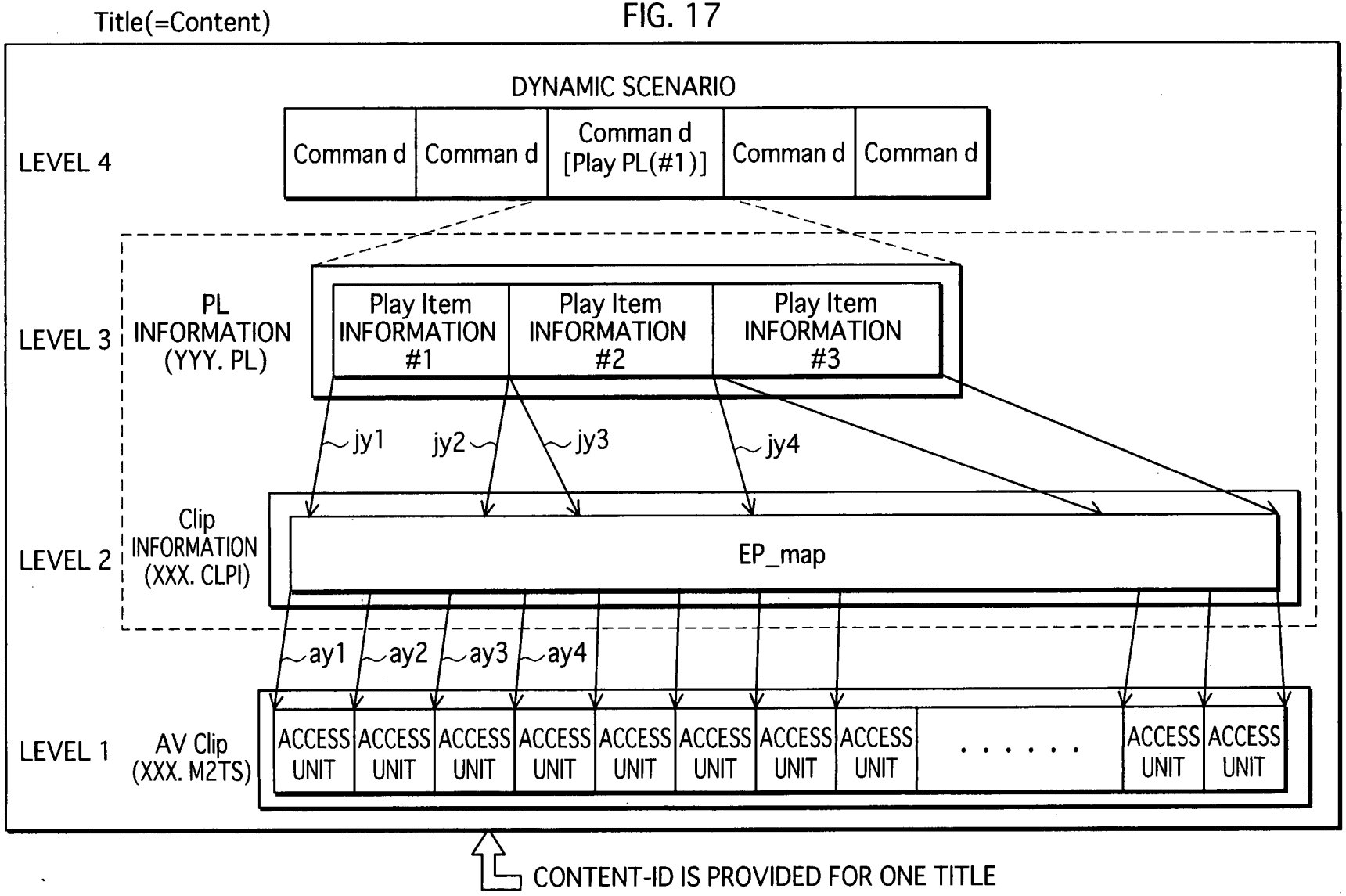

Title(=Content)
DYNAMIC SCENARIO
LEVEL 4
Comman d
Comman d
Comman d
[Play PL(#1)]
Comman d
Comman d
LEVEL 3
PL
INFORMATION
(YYY. PL)
Play Item
INFORMATION
#1
Play Item
INFORMATION
#2
Play Item
INFORMATION
#3
jy1
jy2
jy3
jy4
LEVEL 2
Clip
INFORMATION
(XXX. CLPI)
EP_map
ay1
ay2
ay3
ay4
LEVEL 1
AV Clip
(XXX. M2TS)
ACCESS UNIT
CONTENT-ID IS PROVIDED FOR ONE TITLE

FIG.18A

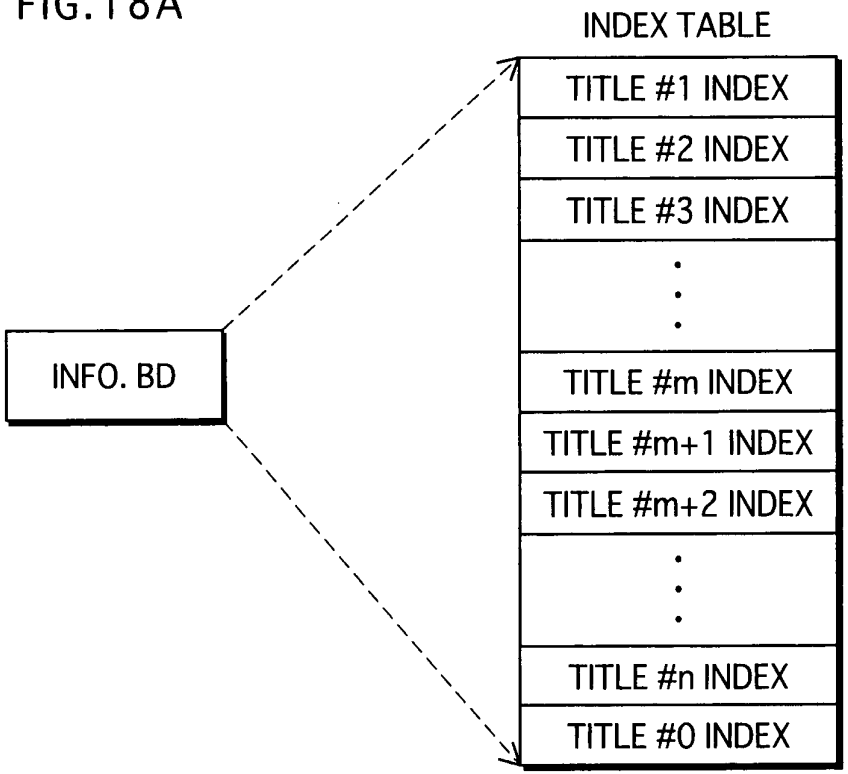


FIG.18B

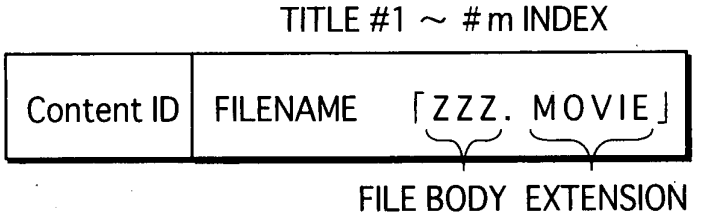


FIG.18C

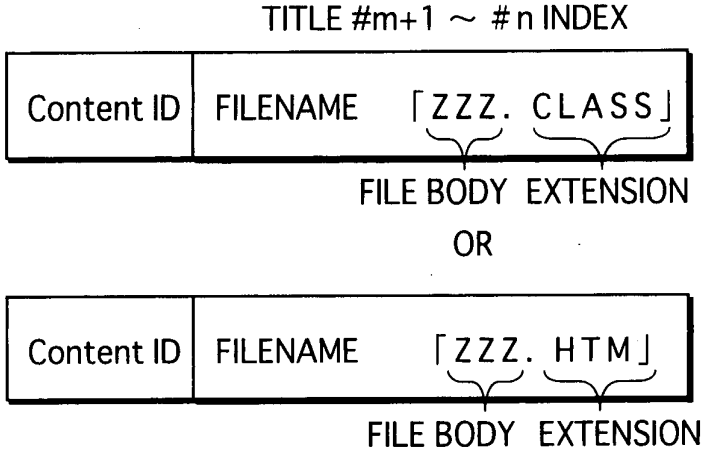


FIG.19

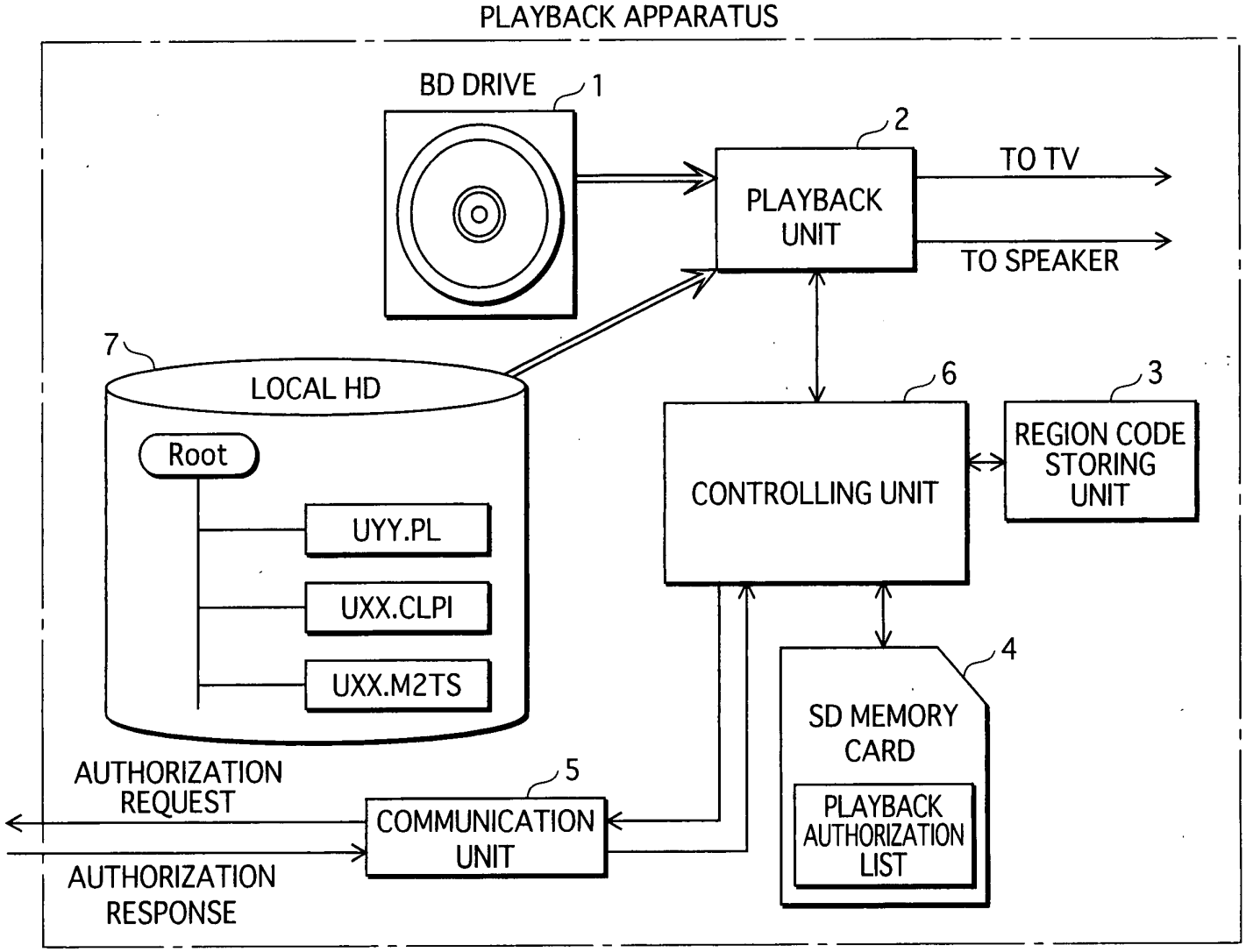

PLAYBACK APPARATUS
BD DRIVE
1
2
PLAYBACK UNIT
TO TV
TO SPEAKER
7
LOCAL HD
Root
UYY.PL
UXX.CLPI
UXX.M2TS
6
CONTROLLING UNIT
3
REGION CODE STORING UNIT
4
SD MEMORY CARD
PLAYBACK AUTHORIZATION LIST
5
COMMUNICATION UNIT
AUTHORIZATION REQUEST
AUTHORIZATION RESPONSE

FIG.20

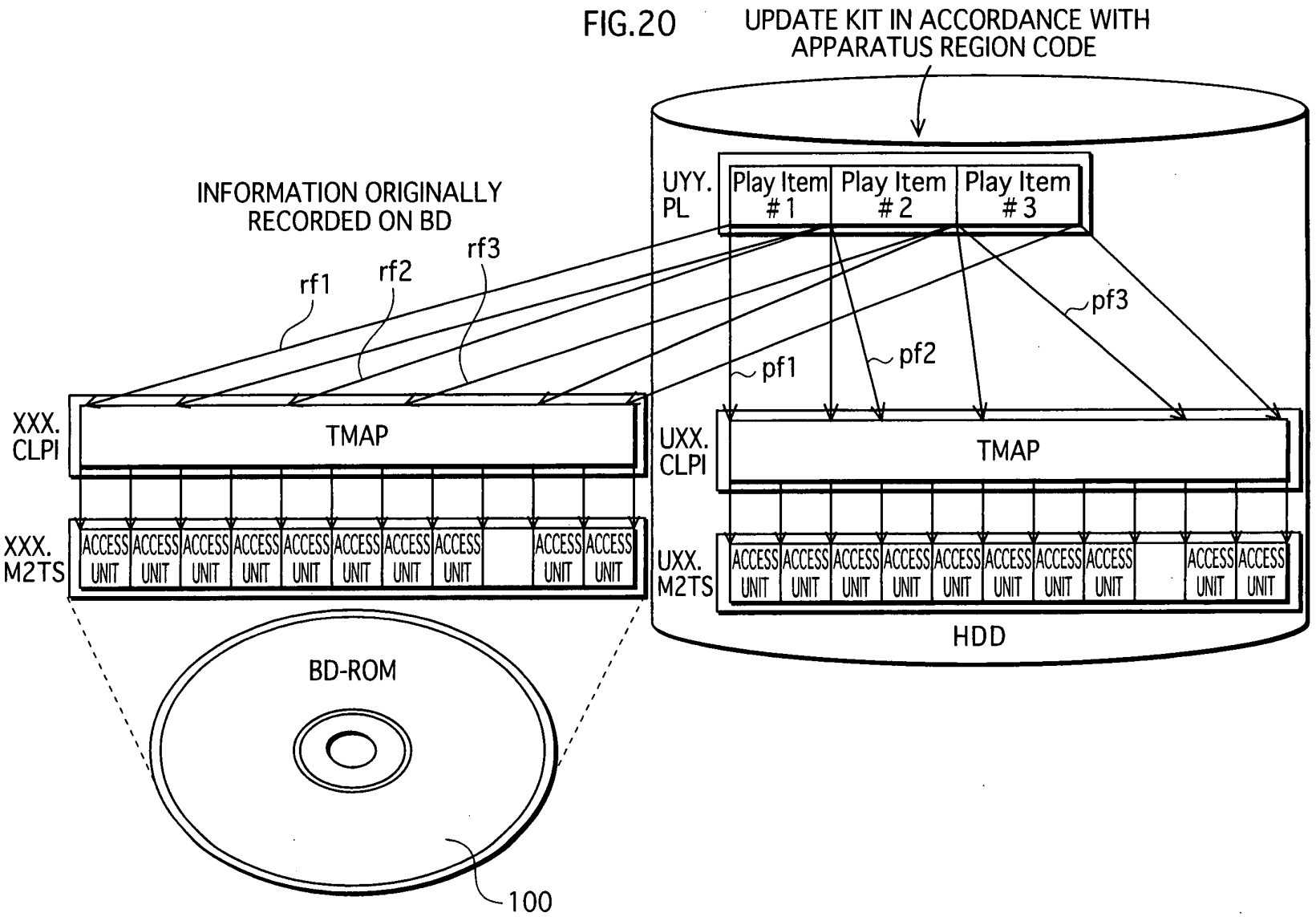
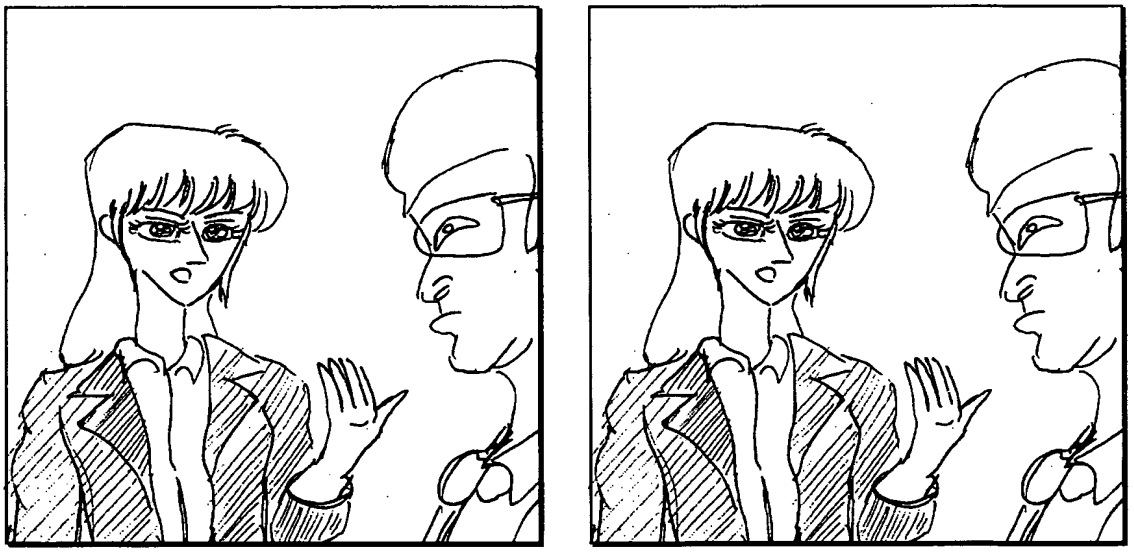

UPDATE KIT IN ACCORDANCE WITH APPARATUS REGION CODE
INFORMATION ORIGINALLY RECORDED ON BD
UYY. PL
Play Item #1
Play Item #2
Play Item #3
rf1
rf2
rf3
pf1
pf2
pf3
XXX. CLPI
TMAP
UXX. CLPI
TMAP
XXX. M2TS
UXX. M2TS
ACCESS UNIT
HDD
BD-ROM
100

FIG.21



AUDIO OF ACCESS UNIT #100 ON BD

He had a person at one's nod.

AUDIO OF ACCESS UNIT #100 IN UPDATE KIT

彼は人をアゴで使っている。

FIG.22A

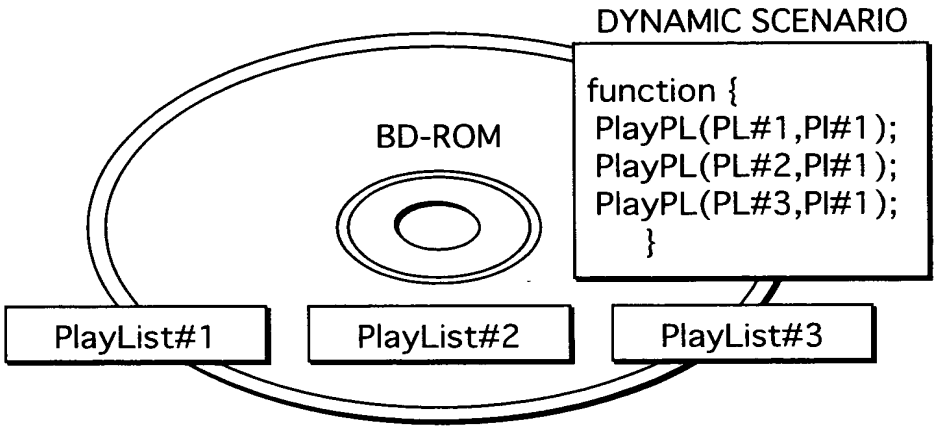


FIG.22B

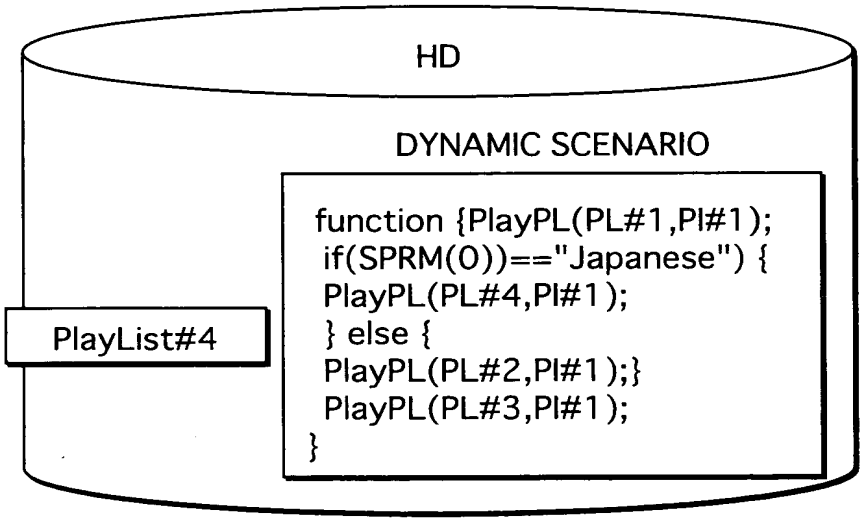


FIG.23A

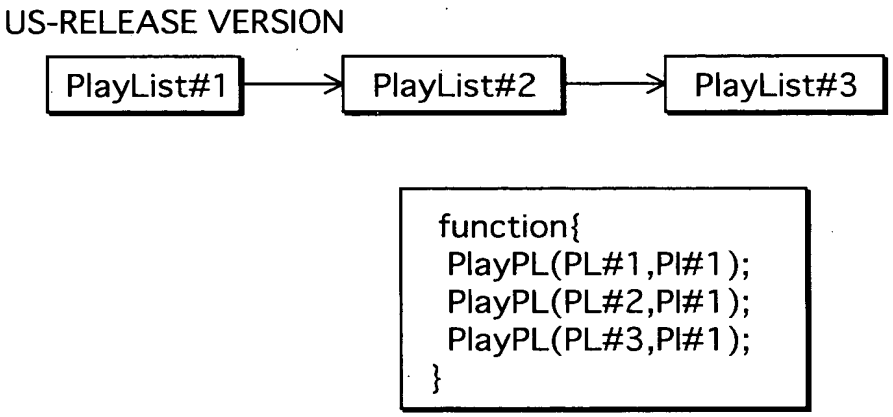
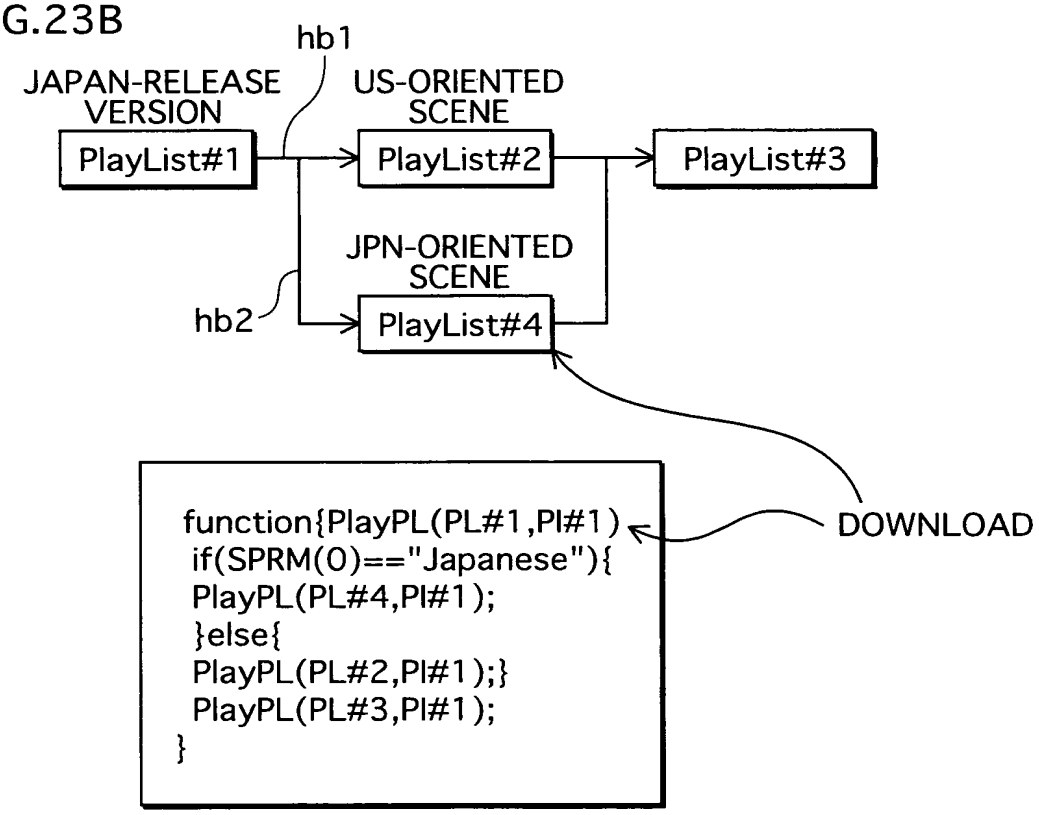



FIG.23B